

AMENDMENTS TO THE CLAIMS

Claims 1-2 (Canceled)

3. (Currently Amended) The mass analysis apparatus of claim ~~[[1]]~~ 6, wherein said first ion source is selected from the group of electro spray (ESI), pneumatically assisted electro spray, nano-spray, sonic spray (SSI), and MALDI ion sources.

Claims 4-5 (Canceled)

6. (Currently Amended) ~~[[The]]~~ A mass analysis apparatus ~~of claim 5,~~
comprising:

a first ion source which ionizes a sample and produces sample ions;

a second ion source which produces ions having a polarity opposite to the polarity of the sample ions, the second ion source being an atmospheric pressure chemical ionization ion source which comprises:

a corona discharge electrode;

a shield electrode which is formed to cover said corona discharge electrode and has an opening to emit the generated ions, wherein said shielded electrode is made of a conductive metal material and said opening is covered with a metal mesh; and

a power source to supply a voltage to said corona discharge electrode; and

a mass spectrometer, wherein said second ion source is provided between said first ion source and said mass spectrometer apart from the axis of a flow of the sample ions to the flow of sample ions discharged from said first ion source, wherein said first and second ion sources are atmospheric pressure ion sources that perform ionization at the

atmospheric pressure and ions emitted from said first and second ion sources cross also at the atmospheric pressure.

7. (Currently Amended) The mass analysis apparatus of claim [[5]] 6, wherein said shield electrode is kept at the ground potential.

8. (Currently Amended) The mass analysis apparatus of claim [[1]] 6, wherein said second ion source is equipped with an inlet section which introduces a compound for accelerating generation of ions.

9. (Original) The mass analysis apparatus of claim 8, wherein said compound is selected from a group of alcohols and non-ionic surfactant.

Claims 10-27 (Withdrawn)

28. (New) A mass analysis apparatus comprising:

a first ion source which ionizes a sample to produce sample ions;

a second ion source which produces ions having a polarity opposite to that of the sample ions, the second ion source comprising:

a corona discharge electrode; and

a shield electrode which is formed of a conductive metal material to surround said corona discharge electrode and a metal mesh covering an opening for emitting the produced ions; and

a mass spectrometer,

wherein said second ion source emits ions toward the flow of sample ions discharged from the first ion source to cross over the ion beams from both ion sources.

29. (New) The mass analysis apparatus according to claim 28, wherein the first ion source is selected from a group of electro spray (ESI), pneumatically assisted electro spray, nano-spray, sonic spray (SSI), and MALDI ion sources.

30. (New) The mass analysis apparatus of claim 28, wherein said shield electrode is kept at the ground potential.

31. (New) The mass analysis apparatus of claim 28, wherein the opening of the second ion source is positioned on an extended axis of the corona discharge electrode.

32. (New) The mass analysis apparatus of claim 28, wherein the ion beam emitted from the opening of the second ion source intersects the sample ion beam emitted from the first ion source.

33. (New) The mass analysis apparatus of claim 28, wherein the second ion source is equipped with an inlet section which introduces a compound for accelerating generation of ions.

34. (New) The mass analysis apparatus of claim 33, wherein said compound is selected from a group of alcohols and non-ionic surfactants.